Takehiko SHIODA, et al. PLAY BACK APPARATUS

[FIG. 1]

1: OPERATION SECTION

2: CONTROL SECTION

BUFFER MEMORY 3:

COMPRESSION DECODER 4:

DATA EXTRACTION CIRCUIT 5:

6: RAM

7: DATA CORRECTION CIRCUIT

8: SWITCHING SW

9: D/A

the state of the party state of the state of

10: AMP

11: SP

ADDRESS CONTROL SIGNAL GENERATOR 12:

M: SOLID STATE MEMORY

COMPRESSION BIT STREAM DATA A:

В: PCM AUDIO DATA (16 BITS)

C: SPECIAL AUDIO DATA (16 BITS)

BIT NUMBER CONVERSION DATA (8 BITS) D:

E: TEMPORARILY STORED DATA (8 BITS)

OUTPUT DATA (8 BITS) F:

ANALOG AUDIO SIGNAL G:



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[FIG. 2]

21: BIT STREAM ANALYZER

22: MDCT COEFFICIENT INVERSE QUANTIZATION

23: GAIN DECODE

24; SPECTRUM ENVELOPE PLAY BACK

25: INVERSE MDCT

26: MDCT COEFFICIENT INVERSE NORMALIZATION

A: COMPRESSION BIT STREAM DATA INPUT

B: MDCT COEFFICIENT QUANTIZATION INDEX

C: GAIN QUANTIZTION INDEX

D: SPECTRUM ENVELOPE QUANTIZATION PARAMETER

E: WINDOW INFORMATION

F: PCM AUDIO DATA OUTPUT

[FIG. 3]

Manuel man anno arten a service de la constanta de la constant

A: RAM ADDRESS SPACE

[FIG. 4]

2: CONTROL SECTION

4: COMPRESSION DECODER

5: DATA EXTRACTION CIRCUIT

6: RAM

7: DATA CORRECTION CIRCUIT

8: SWITCHING SW

12: ADDRESS CONTROL SIGNAL GENERATOR

A: FROM BUFFER MEMORY 3

B: PCM AUDIO DATA (16 BITS)

C: BIT NUMBER CONVERSION DATA (8 BITS)

D: TEMPORARILY STORED DATA (8 BITS)

E: SPECIAL AUDIO DATA (16 BITS)

F: OUTPUT DATA (8 BITS)

G: TO D/A CONVERTER 9

[FIG. 5]

A: PCM CLOCK

B: BIT NUMBER CONVERSION DATA

C: WE SIGNAL

D: ADR SIGNAL (AT THE TIME OF DATA WRITING)

[FIG. 6]

A: PCM CLOCK

B: ADR SIGNAL (AT THE TIME OF DATA READING)

C: RE SIGNAL

D: OUTPUT DATA

[FIG. 7]

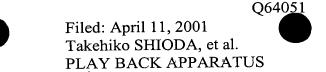
A: PCM CLOCK

B: ADR SIGNAL (AT THE TIME OF DATA READING)

C: RE SIGNAL

D: OUTPUT DATA

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[FIG. 8]

S1: TEMPORARILY STORED DATA EXISTS IN RAM 6 ?

S2: READ OUT DATA OF FIXED MEMORY AND STORE AND HOLD TEMPORARILY

STORED DATA IN RAM 6

S3: PLAY BACK COMMAND IS GIVEN ?

S4: SELECT DATA READING OUT START POSITION

S5: START DATA PLAY BACK FROM READING OUT START POSITION

S6: PLAY BACK STOP COMMAND IS GIVEN ?

S7: FF COMMAND IS GIVEN ?

S8: REW COMMAND IS GIVEN ?

S9: DATA IS COMPLETED ?

A: FROM FF PROCESSING ROUTINE

B: FROM REW PROCESSING ROUTINE

C: TO FF PROCESSING ROUTINE

D: TO REW PROCESSING ROUTINE

[FIG. 9]

A: FF PROCESSING START

B: FF PROCESSING END RETURN

S11: OUTPUT STOP FROM COMPRESSION DECODER 4

S12: READING OUT OPERATION OF TEMPORARILY STORED DATA OF RAM

6

S13: SWITCH SWITCHING SW 8 TO OUTPUT SIDE OF DATA CORRECTION

CIRCUIT 7

S14: FF COMMAND IS RELEASED ?

S15: CALCULATE DATA READING OUT START POSITION X1

S16: RESTART OF OUTPUT FROM COMPRESSION DECODER 4

S17: WRITING OPERATION OF TEMPORARILY STORED DATA OF RAM 6

S18: SWITCH SWITCHING SW 8 TO OUTPUT SIDE OF COMPRESSION DECODER

4

[FIG. 10]

A: REW PROCESSING START

B: REW PROCESSING END RETURN

S21: OUTPUT STOP FROM COMPRESSION DECODER 4

S22: READING OUT OPERATION OF TEMPORARILY STORED DATA OF RAM

6

S23: SWITCH SWITCHING SW 8 TO OUTPUT SIDE OF DATA CORRECTION

CIRCUIT 7

S24: REW COMMAND IS RELEASED ?

S25: CALCULATE DATA READING OUT START POSITION X2

S26: RELEASE STORE AND HOLDING TEMPORARILY STORED DATA OF RAM

6

S27: RESTART OF OUTPUT FROM COMPRESSION DECODER 4

S28: SWITCH SWITCHING SW 8 TO OUTPUT SIDE OF COMPRESSION DECODER

4

[FIG. 11]

1: OPERATION SECTION

3: BUFFER MEMORY

4: COMPRESSION DECODER

5: DATA EXTRACTION CIRCUIT

6: RAM

7: DATA CORRECTION CIRCUIT

8: SWITCHING SW

9: D/A

10: AMP

11: SP

12: ADDRESS CONTROL SIGNAL GENERATOR

14: CONTROL SECTION

M: SOLID STATE MEMORY

A: COMPRESSION BIT STREAM DATA

B: PCM AUDIO DATA (16 BITS)

C: SPECIAL AUDIO DATA (16 BITS)

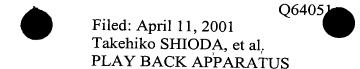
D: BIT NUMBER CONVERSION DATA (8 BITS)

E: TEMPORARILY STORED DATA (8 BITS)

F: OUTPUT DATA (8 BITS)

G: ANALOG AUDIO SIGNAL

H: DEFAULT DATA (8 BITS)



[FIG. 12]

S1: TEMPORARILY STORED DATA EXISTS IN RAM 6 ?

S32: READ OUT DEFAULT DATA OF ROM 13 AND STORE AND HOLD

TEMPORARILY STORED DATA

S3: PLAY BACK COMMAND IS GIVEN ?

S4: SELECT DATA READING OUT START POSITION

S5: START DATA PLAY BACK FROM READING OUT START POSITION

S6: PLAY BACK STOP COMMAND IS GIVEN ?

S7: FF COMMAND IS GIVEN ?

S8: REW COMMAND IS GIVEN ?

S9: DATA IS COMPLETED ?

A: FROM FF PROCESSING ROUTINE

B: FROM REW PROCESSING ROUTINE

C: TO FF PROCESSING ROUTINE

D: TO REW PROCESSING ROUTINE

[FIG. 13]

A: FRAME (N-1)

B: FRAME (N)

C: FRAME (N + 1)

D: HEADER

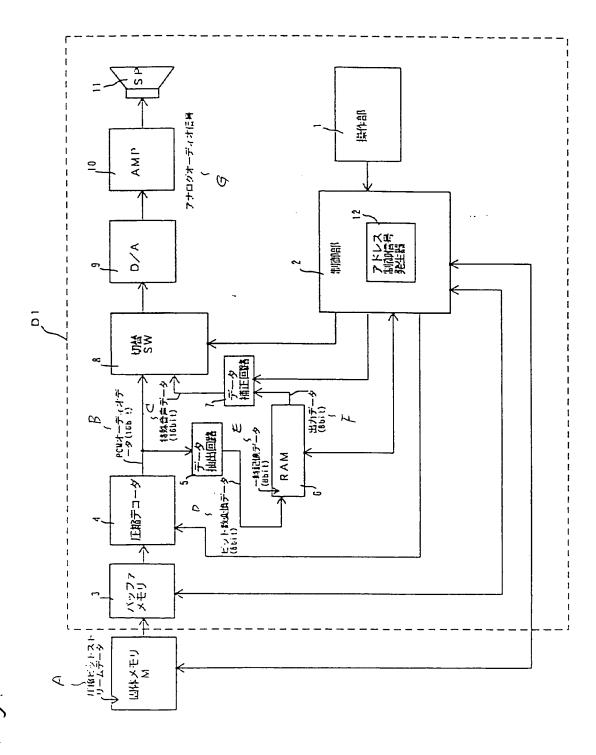
E: WINDOW INFORMATION, ETC.

F: SPECTRUM ENVELOPE/GAIN QUANTIZATION PARAMETER

G: MDCT COEFFICIENT QUANTIZATION INDEX

【図1】

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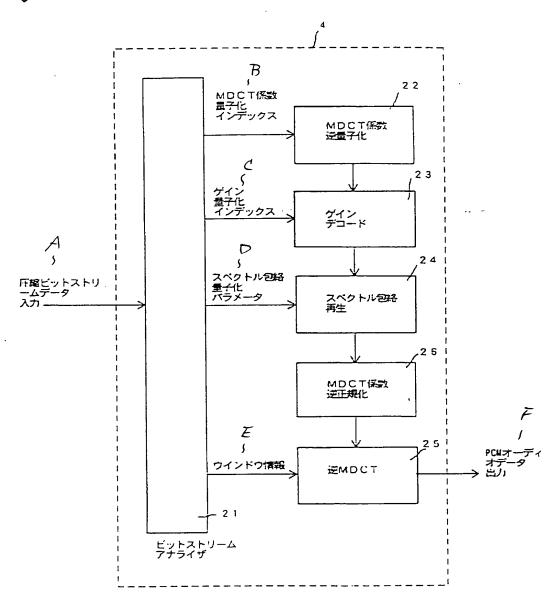
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Fig. 2

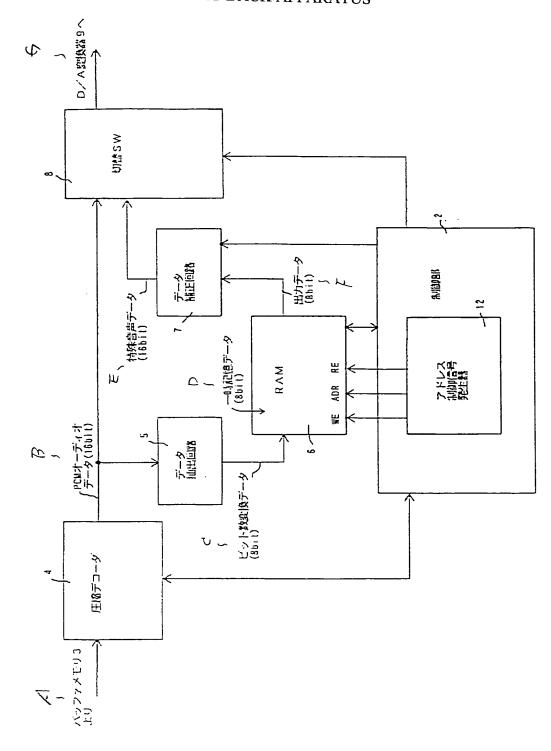
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RAMアドレス空間

Am-1
A2
A1
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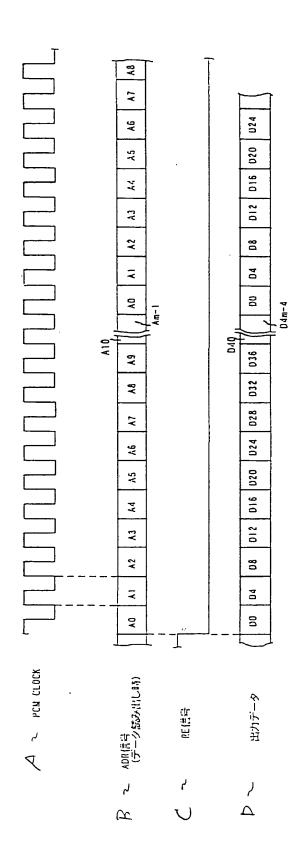
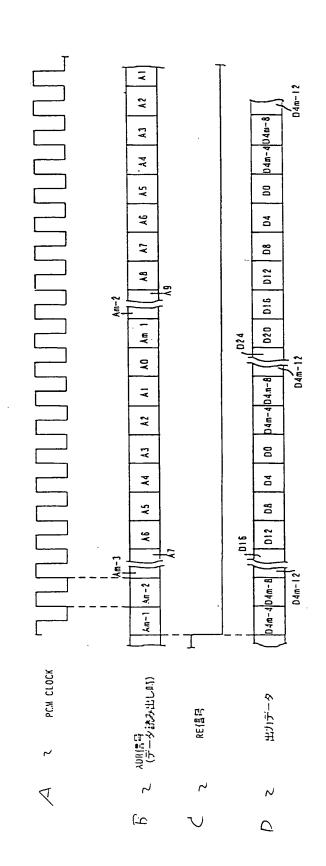


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- [図7]



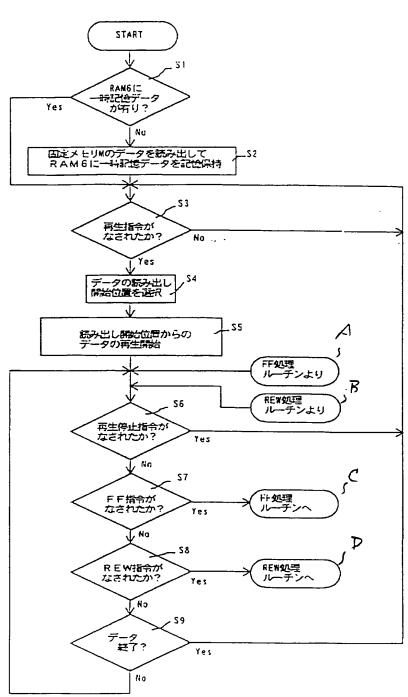
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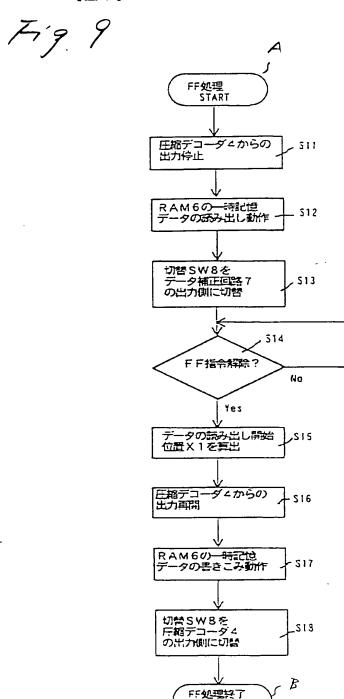
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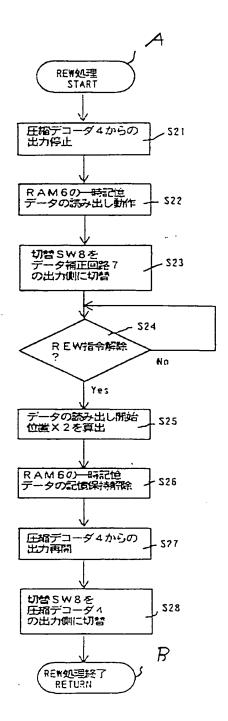
3:



RETURN

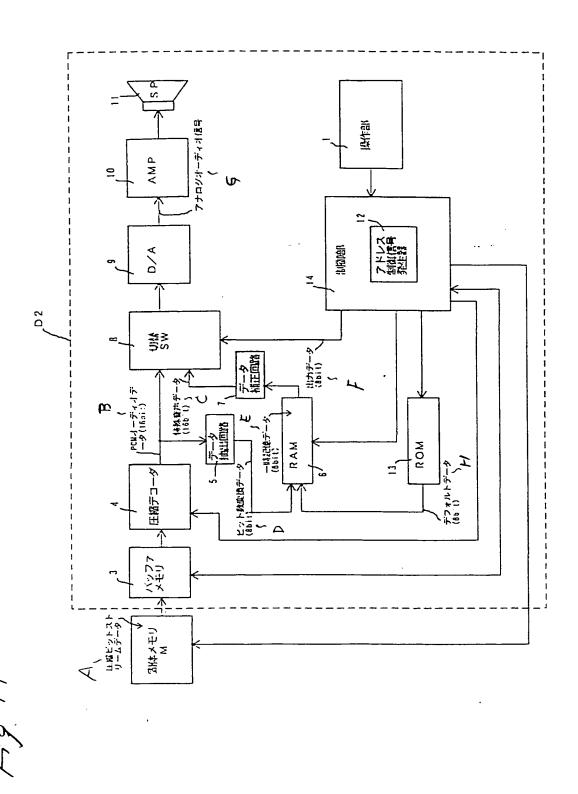
【図10】

Fig. 10



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【図12]

Fig 12

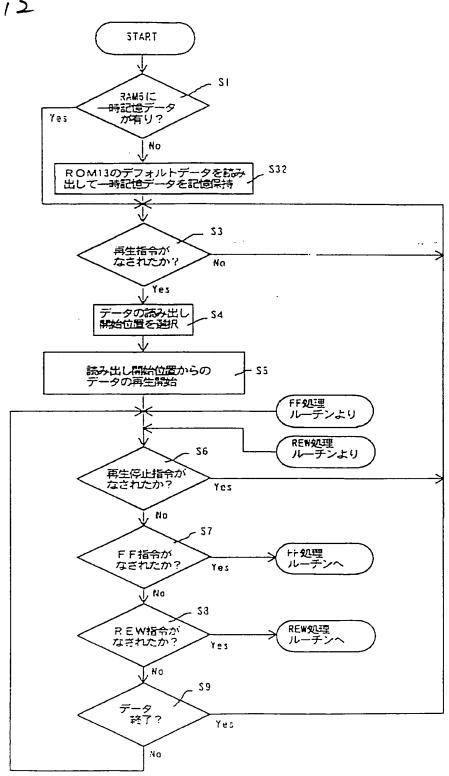
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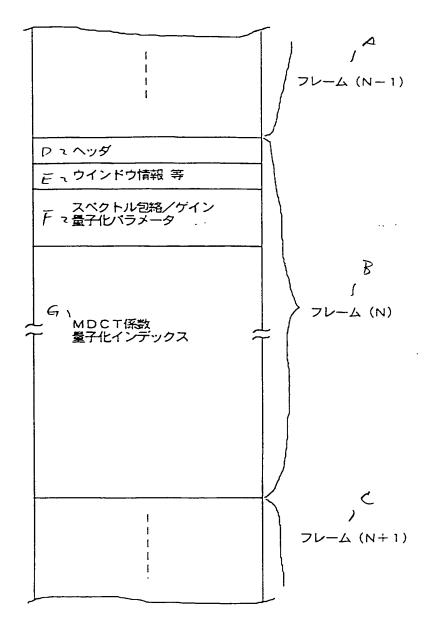
【図13】

Fig. 13

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